

Remarks

Appointment of Associate Attorney

Pursuant to 37 C.F.R. §1.34(b), the principal attorney of record in this case has appointed the undersigned as an associate attorney herein. A document to this effect was executed by the principal attorney and sent to the Patent Office on 11/28/01, for filing in the above-identified application. For the convenience of the Examiner, a copy of the aforementioned appointing document is attached.

Information Disclosure Statement

In accordance with the duty of disclosure set out at 37 C.F.R. §1.56, an Information Disclosure Statement is submitted herewith. A copy of each listed patent is also provided. Each of the listed references was first cited in a communication from the European Patent Office in a counterpart foreign application, not more than three months prior to the filing of this Amendment. The submission of the Information Disclosure Statement, in conjunction with the foregoing statement, complies with 37 C.F.R. §1.97(c)(1), and thus warrants consideration by the Office of the references cited therein without the payment of a fee.

Changes to the Specification

Paragraph 14 of the specification has been changed as per the Examiner's direction. The applicants have made additional minor changes to the aforementioned paragraph for the sake of clarity and to correct its grammar.

The Claims

All claims as originally filed (Claims 1-5) stand rejected.

Claim 1 has been rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent 5,025,490 to issued to Tamura in view of U.S. Patent 5,993,996 issued to Firsich (hereinafter respectively referred to as "*Tamura*" and "*Firsich*"). Claims 2-5 have been rejected under 35 U.S.C. §103(a) as unpatentable over *Tamura* and *Firsich*, in view of U.S. Patent 4,442,165 issued to Gebhardt et al. (hereinafter referred to as "*Gebhardt*"). The applicants respectfully traverse the Examiner's rejections.

Requirements for *Prima Facie* Obviousness

The burden is on the Commissioner of Patents and Trademarks, acting through examining officials, to establish that an applicant is not entitled to a patent. The obligation of the examiner to go forward and produce reasoning and evidence in support of obviousness is clearly defined at M.P.E.P. §2142:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness.

A general definition of *prima facie* unpatentability is provided at 37 C.F.R. §1.56(b)(2)(ii):

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability. (emphasis added)

It follows that in the absence of such a *prima facie* showing of obviousness by the examiner (assuming there are no objections or other grounds for rejection), an applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443 (Fed. Cir. 1992).

Where references must be combined to produce the claimed invention, M.P.E.P. §2143.01 requires that there be some teaching, suggestion, or motivation to combine them found either explicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The applicants respectfully assert that the rejections are ill-advised and should be withdrawn because the Examiner has failed to carry his burden of providing compelling evidence of a teaching, suggestion or motivation to combine the references to produce the claimed invention.

Application of the M.P.E.P. Obviousness Requirements to the Rejected Claims

With respect to Claim 1, it is submitted that the Examiner has not shown any basis to support combining *Tamura* and *Firsich*. *Tamura* teaches an electrode composed of an electrically conductive paste, preferably a graphite paste comprised of graphite particles dispersed in a resin, e. g., an epoxy, phenolic, silicone or acrylic resin. Col. 5, lines 37 – 42. However, this electrode does not seek to control the production of secondary electrons inside a vacuum tube. Instead, *Tamura* teaches a system for controlling undesired electrification on the outside surface of a cathode-ray tube. More particularly, the purpose of electrode unit 4 is to form a capacitor C₂ with indium oxide-tin oxide film 2, to prevent a high voltage v₂ from occurring at the outer surface of the display front of a cathode-ray tube, due to electrification, i. e., when the cathode-ray tube starts to operate. The Examiner has not pointed to any motivation, incentive or suggestion of desirability to use a carbonized resin to suppress the production of secondary electrons, or for any purpose whatsoever, inside a vacuum tube.

Similarly, regarding *Firsich*, the Examiner has not shown any motivation, incentive or suggestion of the desirability to use a carbonized resin for any purpose other than as an electrode in a supercapacitor. As such, the Examiner has not provided a suggestion of desirability or hint of motivation to combine the cathode-ray tube outer surface voltage protection scheme of *Tamura* with the carbonized resin electrode in *Firsich* – and certainly no suggestion or hint that such a combination would have any effect on controlling the production of secondary electrons inside a vacuum tube. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Secondly, the Examiner has improperly cited *Tamura* because it is not in an art that is analogous to the art of the present invention.

In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned. *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

Tamura teaches a cathode-ray tube with its outer panel surface protected from unwanted electrification through the use of layers of transparent electrical conducting

and transparent electrical insulating films. As the Examiner pointed out, a cathode-ray tube is a type of vacuum tube; however, that is the sole analogy between the capacitor scheme disclosed in *Tamura* and the secondary electron control structure and method of the applicants' invention. Protection against unwanted electrification of an outer surface of a cathode-ray tube is well outside the applicants' field of endeavor, and in no way pertinent to the control of secondary electrons, plasma formation and internal pressure resolved by the present invention.

Finally, *Tamura* is inappropriately cited as a reference against Claim 1 because it does not teach the problems of or the solutions to out-gassing, secondary electron production, plasma formation or controlling pressure inside a vacuum tube. Hence, because *Tamura* is not analogous art and because it makes no reference to the problem or the solution taught by applicants' application, it is an improper reference and should not be combined with *Firsich* to support a rejection of Claim 1.

With respect to Claim 2, the applicants respectfully reiterate their objections to the use of *Tamura* and the inappropriateness of combining *Tamura* with *Firsich*, as outlined above in the discussion of Claim 1. As with Claim 1, it is equally inappropriate to combine the nonanalogous art in *Tamura* with *Firsich* to justify an obviousness rejection. Furthermore, applicants respectfully submit that the Examiner has improperly cited *Gebhardt* because it, too, comprises nonanalogous art. *Gebhardt* teaches a low-density, thermally insulating carbon foam, not a vacuum tube anode/collector. Thermally insulating carbon foams are well outside applicants' field of endeavor and in no way pertinent to the problems of secondary electron production, plasma formation and internal pressure control solved by the applicants' invention.

Similarly, *Firsich* is itself inappropriate because it, also, does not teach the problems of or the solutions to secondary electron production, plasma formation or internal pressure control with anodes/collectors in vacuum tubes. As with *Tamura*, *Firsich* is an improper reference, and neither *Tamura* nor *Firsich* should be combined with *Gebhardt* to support a rejection of Claim 2.

With respect to method Claims 3, 4 and 5, the applicants reiterate the above arguments concerning the inappropriateness of the *Tamura*, *Firsich* and *Gebhardt* references. Additionally, M.P.E.P. §2143.03 requires that all claim limitations be taught or suggested by prior art to justify a rejection. The applicants submit that the Examiner

has not considered the limitation presented in the preamble of independent Claim 3: "A method of coating an anode/collector used in a vacuum tube" None of the three references cited by the Examiner teach or suggest any aspect involving the coating of an anode/collector used in a vacuum tube. Therefore, the rejections of Claims 3, 4 and 5 based on the foregoing references are not justified.

Specifically concerning Claim 3, it is again noted that none of the references teach or even hint at the problems of or solutions to secondary electron production, plasma formation or internal pressure control taught by the applicants. While certain facets of a particular embodiment of the applicants' invention (as taught in Claim 3) are respectively found in portions of *Tamura*, *Firsich* and *Gebhardt*, the Examiner has shown neither a suggestion of desirability nor hint of motivation to combine the graphite paste electrode applied to the outside of a cathode-ray tube as disclosed by *Tamura*, with the baked phenolic resin of *Firsich*, with the chemistry vapor deposition of pyrocarbon material of *Gebhardt*, to produce a secondary electron and plasma controlling anode/collector inside a vacuum tube.

Claims 4 and 5 each depend from Claim 3, and respectively add steps that further limit the method of the present invention. As previously noted herein, the applicants respectfully contend that Claim 3 is nonobvious under 35 U.S.C. §103(a), and thus submit that Claims 4 and 5 should be held nonobvious as well.

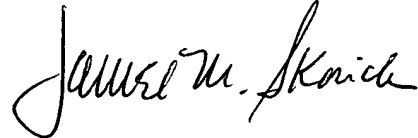
Summary

An Information Disclosure Statement has been submitted herewith, and the applicants respectfully request consideration of the references cited therein. Paragraph 14 of the specification has been corrected in accordance with the Examiner's instructions. The applicants have traversed Examiner's rejections of Claims 1-5. The applicants respectfully submit that the Examiner has not met his burden of establishing a *prima facie* case of obviousness and petition the Examiner to withdraw his rejection of Claims 1-5. Accordingly, the applicants earnestly solicit the favorable consideration of their application, and respectfully request that it be passed to issue in its present, amended condition.

09/682,388
Shiffler, et al.

Should the Examiner find any remaining impediment to the prompt allowance of the aforementioned claims that might be resolved or overcome with the aid a telephone conference, he is cordially invited to call the undersigned at the telephone number set out below.

Respectfully submitted,

A handwritten signature in cursive script, reading "James M. Skorich".

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December 10, 2002

Amended Specification with Markings to Show Changes Made

[0014] To reduce these deleterious effects, the anode/collector is coated using a carbon pyrolysis technique. First, a carbon surface or metal surface coated with a thin film of carbon is obtained in the shape of the desired anode. The electron impact surface is then coated with a carbonized resin. A carbonized resin, e.g., phenolic, is any resin that when heated sufficiently [hot] leaves only carbon [is] in a solid state, generally in the form of a powder. The resin can be applied by painting, spraying, or dipping the part in a resin bath. The part is then baked to greater than 700° centigrade in a non-oxidizing atmosphere, decomposing the resin and releasing its volatile components. A porous carbon "char" residue is left on the surface.